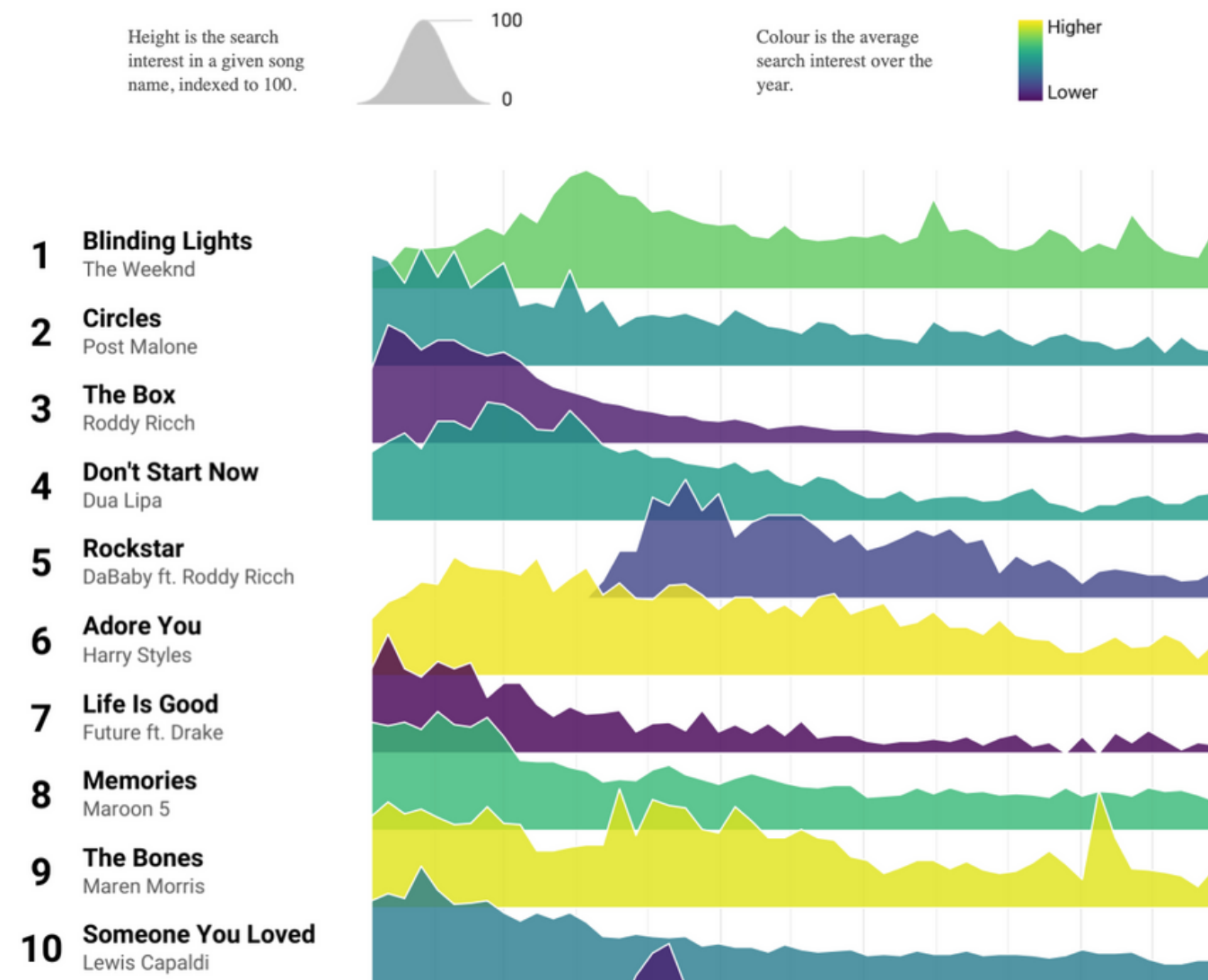# Spotify

Alex Arnold, Scott Frazier, Samantha Lane, Jenette Smith

Inspiration

Most Successful Songs of 2020

Google Search trends (US) for the top 20 songs of *Billboard's* Year-End Hot 100

Height is the search interest in a given song name, indexed to 100.

100

0

Colour is the average search interest over the year.

Higher

Lower

1 **Blinding Lights**
   The Weeknd

2 **Circles**
   Post Malone

3 **The Box**
   Roddy Ricch

4 **Don't Start Now**
   Dua Lipa

5 **Rockstar**
   DaBaby ft. Roddy Ricch

6 **Adore You**
   Harry Styles

7 **Life Is Good**
   Future ft. Drake

8 **Memories**
   Maroon 5

9 **The Bones**
   Maren Morris

10 **Someone You Loved**
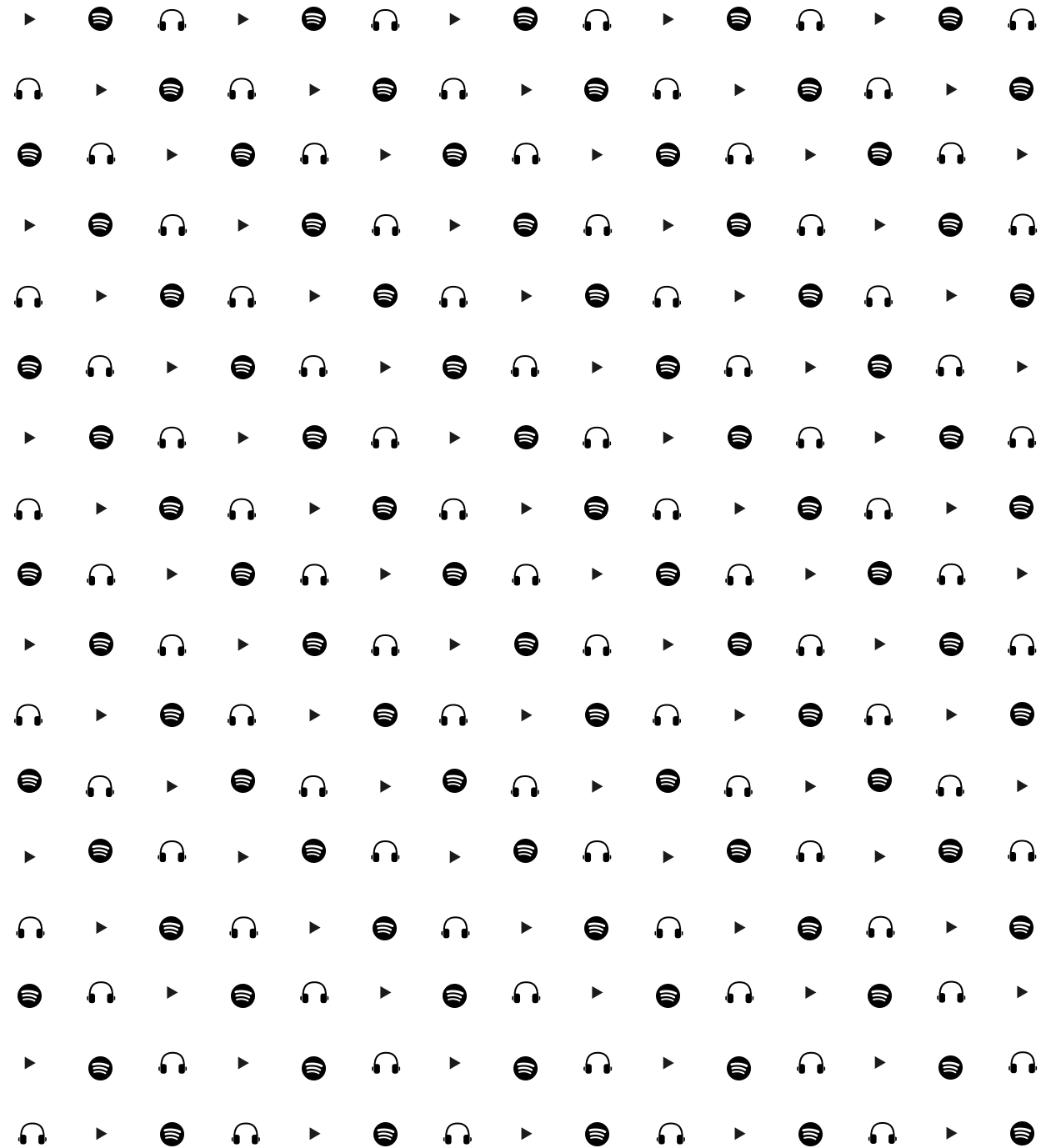   Lewis Capaldi

Music is to the soul what words are to the mind.

MODEST MOUSE

GRACIOUSQUOTES.COM

2020 WRAPPED

AGENDA

- Hypotheses

- Data

- Audio Features

- Demo

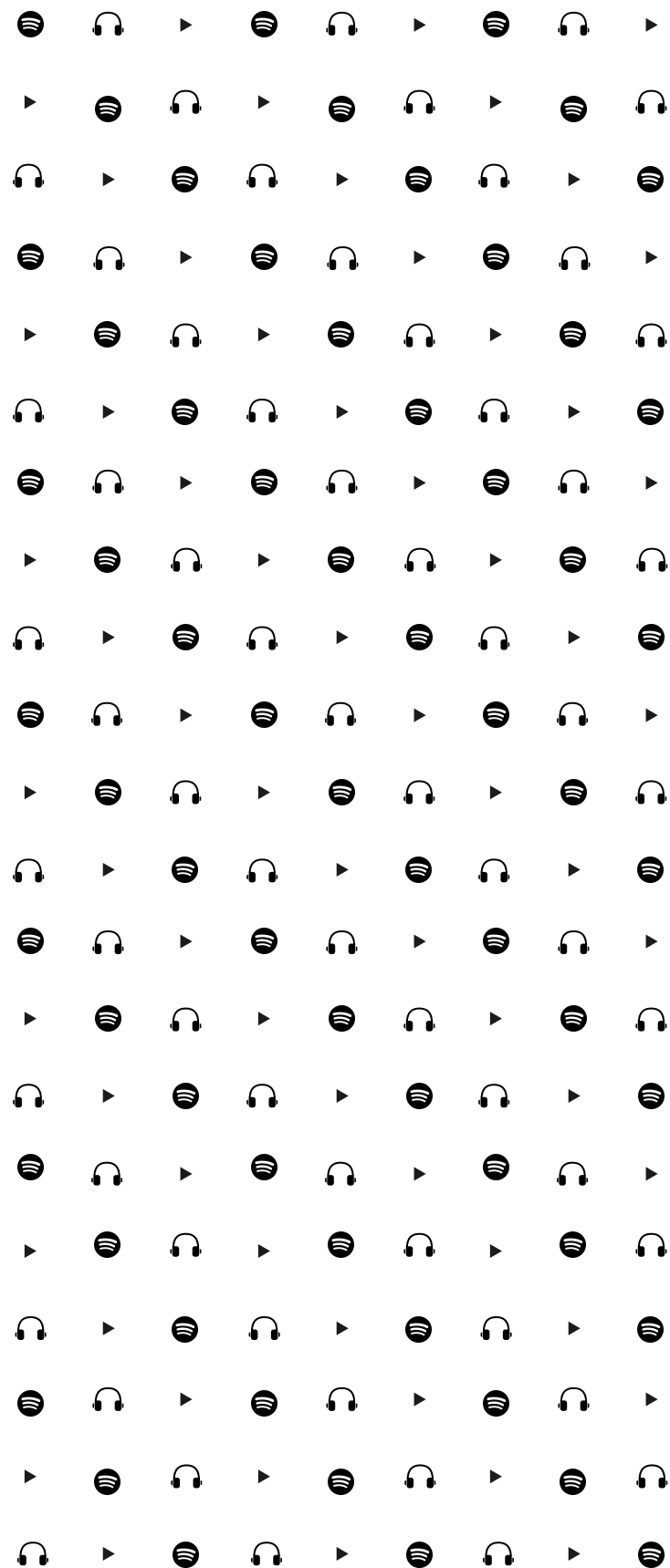- Conclusions

- Limitations & Future Work

Hypotheses

Hypothesis 1:

The United States has the highest streams out of any country.
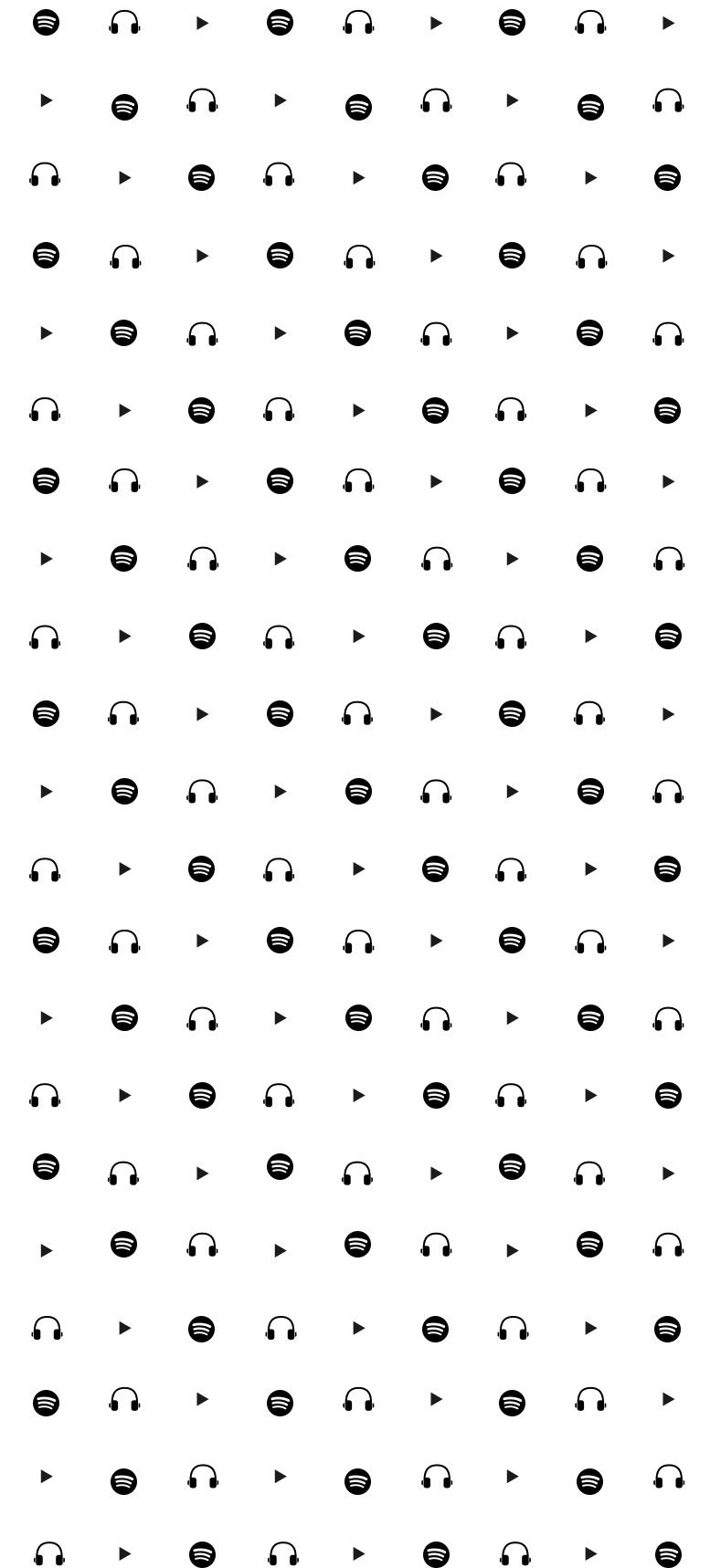
Hypothesis 2:

Audio features, such as speechiness and danceability, have increased over time.
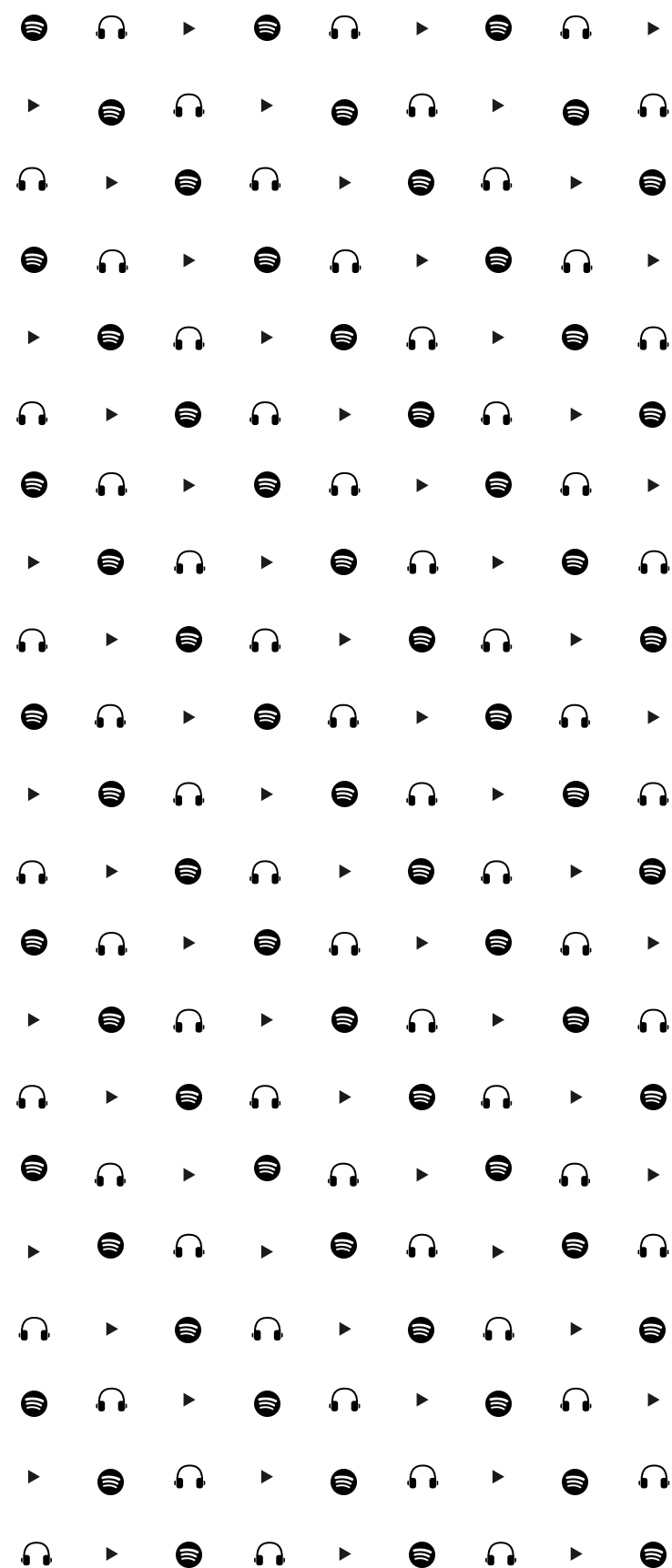
Data

- Kaggle
  - Spotify Dataset 1921-2020
  - 160K+ Tracks

- Streams of 2020 CSV

- Tableau Streams CSV
  - Streams up to 2017

- Census CSV
  - Country Data

Audio Features

- **Acousticness-** confidence measure of whether the track is acoustic.

- **Danceability-** how suitable a track is for dancing based on a combination of musical elements including tempo, rhythm stability, beat strength, and overall regularity

- **Energy-** represents a perceptual measure of intensity and activity

- **Instrumentalness-** predicts whether a track contains vocals

- **Liveness-** detects the presence of an audience in the recording

- **Speechiness-** detects presence of spoken words in a track

- **Valence-** describes musical positiveness conveyed by a track

- **Key-** Primary key of track

- **Mode-** indicates the modality (major or minor) of a track

- **Duration_ms-** length of track in milliseconds

- **Loudness-** overall loudness of a track in decibels (dB)

- **Popularity-** popularity of an album calculated by the individual tracks (scored 0 to 100-most popular)

- **Tempo**- estimated tempo of track in beats per minutes (BPM)

https://developer.spotify.com/documentation/web-api/reference/#endpoint-get-audio-features

Conclusions

Hypothesis 1:

Accept the alternative hypothesis.

The United States streams the most music.

Hypothesis 2:

Fail to reject the null hypothesis.

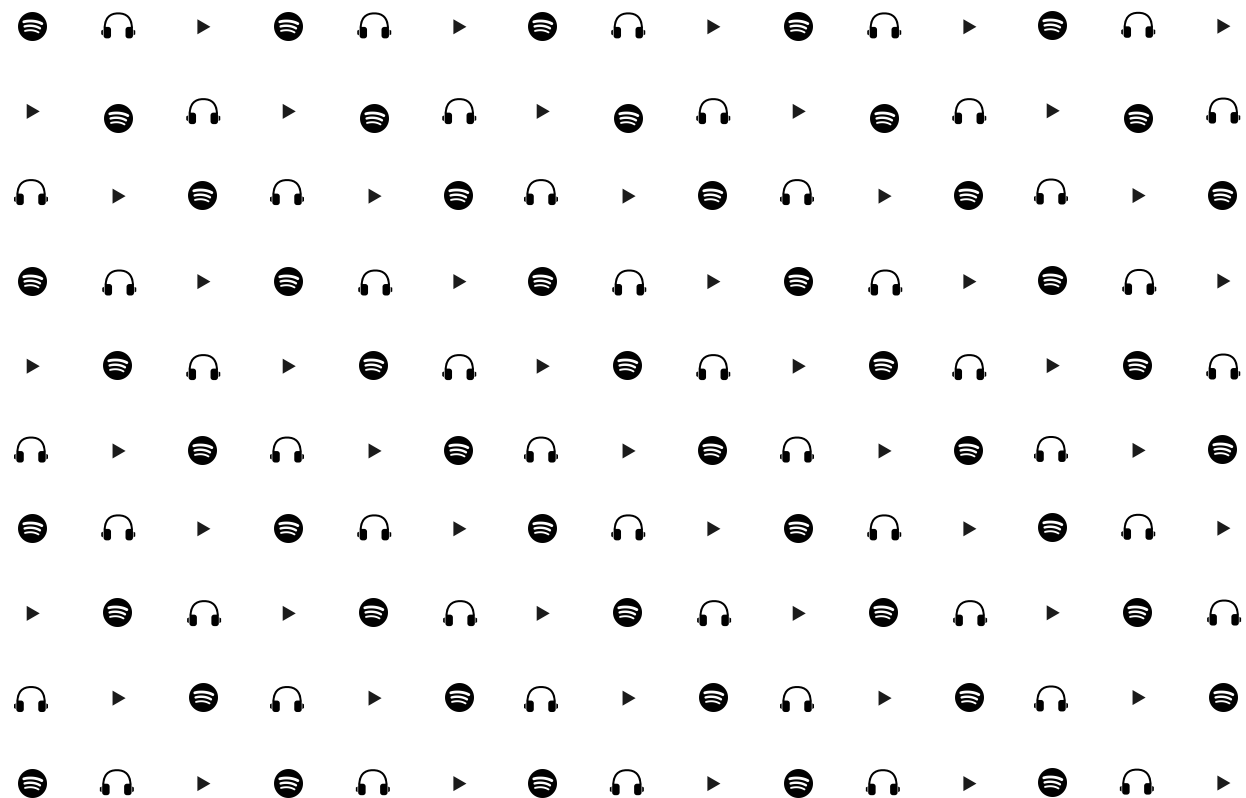Speechiness has not increased over time while danceability has increased over time.

Limitations & Future Work

01 **Limitations**

- Country Access to Spotify
- More Current Data
  - (ex. 2017 Streaming Data)
- Vast Genre Categories
- D3 Knowledge
- Time

02 **Future Work**

- Integrating Spotify API Data
- Utilizing GeoJSON to create MapBox map
- Analyzing Genres Further

References

- **Audio Features**: https://developer.spotify.com/documentation/web-api/reference/#endpoint-get-audio-features
- **Data**:
  - **Countries**: https://raw.githubusercontent.com/plotly/datasets/master/2014_world_gdp_with_codes.csv
  - **Kaggle:** https://www.kaggle.com/yamaerenay/spotify-dataset-19212020-160k-tracks/notebooks
  - **Tableau Streams**: https://public.tableau.com/profile/glenn.cable#!/vizhome/Book5_1502/worldmap
- **Inspiration**:
  - https://newsroom.spotify.com/2020-12-01/6-new-features-to-unwrap-in-your-spotify-2020-wrapped/
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- **Spotify logo:** https://www.pngegg.com/en/png-xsvpm
- **Visualizations:**
  - https://plotly.com/javascript/
  - https://d3-legend.susielu.com/

Thank you